



# County of Orange

*Planning & Development Services Department  
Development Processing Center*

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## GUIDELINES FOR THE INSTALLATION OF RESIDENTIAL POOLS AND SPAS

The following guidelines are offered to help the installer comply with installation procedures and applicable codes. Should any additional information be required, consult the current Uniform Swimming Pool, Spa and Hot Tub Code and the current National Electrical Code or, call Building Inspection Services at (949) 472-7979.

**NOTE:** A re-inspection fee may be charged for repetitive corrections per the codified ordinances of the County of Orange.

### A. FIRST INSPECTION

1. **POOL/SPA LOCATION PER APPROVED PLAN:** The pool/spa must be located per the approved plans prior to calling for the first inspection. Measurements are taken from the inside wall of the spa. Normally any change in a level lot within 10 feet of the pool or spa location must be approved prior to any inspection.
2. **MAIN DRAIN OUTLETS (SUCTION FITTINGS):** Every pool with a normal water depth of six feet or less and every spa or hot tub shall be equipped with a minimum of two suction outlets per pump system. Each outlet must be interconnected with piping equivalent in size to that of the common pipe. The two outlets shall have a minimum separation of four feet unless this dimension is unattainable. (See drawing on Page 4.)
3. **CIRCULATION PIPING:** PVC plastic, schedule 40, pipes and fittings may be used for circulating piping systems. All circulating piping shall be visible for inspection and must be inspected and approved before being covered or concealed. The entire system shall be tested and must hold a static water or air pressure test of not less than 25 psi for 15 minutes. Circulating pumps need not be tested.
4. **ELECTRIC BONDING:** The following must be bonded with a continuous No. 8 AWG solid copper conductor: the reinforcing metal of the pool structure; all metal parts of pool equipment; all metal parts or components within 5 feet of the inside wall of the pool or spa (includes metal straps for posts; metal fences; window and door frames; etc.) any metal enclosures associated with the pool equipment; and, if a pool light is installed, the housing and junction box thereof.

5. **POOL LIGHT:** Must have a forming shell connected to pool light junction box with metallic or non-metallic raceway sized per manufacturer's specifications. Pool light junction boxes shall be located at least 4 feet from the pool or spa and 8 inches above the maximum pool or spa water level. If non-metallic raceway is used, a minimum No. 8 AWG insulated conductor must be installed therein and bonded at the inside of the light niche. Such bond shall be encapsulated with a listed potting compound.

6. **IN-GROUND FIBERGLASS SPA**

The enclosure requirements shown below under THIRD INSPECTION must be met for this first inspection.

**B. SECOND INSPECTION**

1. **ELECTRICAL OUTLETS**

No lighting fixture outlets, regardless of voltage, may be installed within 5 feet of the pool or spa. No electrical receptacles may be installed within 10 feet of the pool or spa. Any receptacle within 20 feet of the pool must be protected by a ground fault circuit interrupter. One such receptacle is required within 20 feet of the pool or spa but not closer than 10 feet.

2. **WASTEWATER DISPOSAL**

All new swimming pools/spas shall have facilities for disposal of swimming pool/spa wastewater into a public sewer. This shall consist of a "P" trap, 3 inches or more in diameter, to be connected to the sewer with a height of the tail piece a minimum of 6 inches above the flood level of the adjacent surface. The discharge outlet terminal from the pool filter shall be protected from backflow by a minimum 2 inch air gap above the flood rim of the receptor. If the "P" trap is not within sight of the filter, a sight glass shall be installed on the filter that will indicate when the backwash process is complete. In the case of a hardship, a "P" trap smaller than 3 inches in size may be acceptable when approved by the administrative authority.

3. **ENERGY REGULATIONS**

Directional water inlets are required that adequately mix the pool water. Provide at least 3 feet of piping between the filter and the heater to allow for the future addition of solar heating equipment.

4. **ELECTRICAL CONDUIT**

May be schedule-40 PVC plastic. Must be installed 18 inches below grade (4 inches when beneath concrete). Must be U.L. listed conduit. Do not use water pipe or water piping fittings.

## **5. GAS PIPING**

- a. **Metallic Pipe:** May be black or galvanized steel, protected with approved factory applied coating. Fittings and short sections of pipe that are not coated must be primed and wrapped with 10 millimeter tape for a total thickness of 40 millimeters. Must be buried at least 12 inches below grade (6 inches if below concrete). A pressure test is required and must hold a minimum of 10 psi for at least 15 minutes.
- b. **Non-Metallic Pipe:** Must be PE plastic, schedule 40. The words "Natural Gas" must appear on the piping. PE cannot be used above ground. Transition from PE to metal shall be made with an approved transition fitting only. Such transition must occur in the horizontal portion of the trench at least 30 inches before the turn to vertical and must be buried 18 inches below grade (or 12 inches if below concrete). A pressure test is required and must hold 10 psi for 15 minutes. An insulated copper tracer wire (minimum No. 18 AWG) with a permanent tag shall be installed with PE gas piping.
- c. **General:** Do not cover or conceal piping until inspected and approved. For correct pipe size see Section 1217.0 of the current Uniform Plumbing Code. Do not install or connect gas lines to meter or appliance until the pressure test has been approved.

## **C. THIRD INSPECTION**

### **1. POOL/SPA ENCLOSURE**

Every pool or spa must be enclosed with a fence a minimum of 5 feet in height, with no openings between vertical members or more than 4 inches and shall not have openings between or protrusions that render the fence easily climbable. Doors and gates providing access to the pool or spa shall be equivalent to the fence and shall be self-closing and self-latching and shall open away from the pool or spa. Doors leading from the house directly to the pool/spa area must be self-closing and self-latching with the latching mechanism located at least 54 inches above the floor. As an alternative, such doors may be equipped with an alarm. Such alarm shall be equipped with a manual means to deactivate the alarm for single opening. Such deactivation shall last no longer than 15 seconds. The deactivation switch shall be located at least 54 inches above the threshold of the door.

### **2. ENERGY REGULATIONS:**

Gas water heaters must have a minimum thermal efficiency of 78% and be equipped with an on-off switch that allows the heater to be turned off without adjusting the thermostat setting. The recirculating pump must be time-clock controlled.

**3. OUTDOOR HEATER INSTALLATION;**

All mechanical equipment shall be set on a concrete base 3 inches above grade. At least 10 feet of copper piping is required on the outlet of the water heater unless otherwise specified by the manufacturer. The manufacturer's installation instructions must be available at the job site at the time of inspection. The heater vent termination must be a minimum of 18 inches from the property line and 4 feet from any door, window or gravity air inlet into any building measured from the closest edge of the vent. Clearance to any wall shall be per manufacturer's installation instructions and listing. The heater must have working space at the access door per the heater installation instructions. Consult the gas utility company requirements for the minimum separation from the gas meter. Gas shut-off valve required outside of and within 3 feet of the pool heater.

**4. MOTORS**

Each motor must be on a separate circuit. Such circuit shall have a minimum size of No. 12 AWG copper. A green No. 12 AWG minimum grounding wire shall be run with the circuit conductors from an equipment grounding strip in the service equipment or panelboard. All motors and controls shall be grounded. Spa and hot tub motors require the protection of a ground fault circuit interrupter. All electrical equipment must be connected and ready to energize.

**4. WORKING SPACE**

A clear working space of 36 inches is required in front of electrical panels. The minimum width of that space is 30 inches and the minimum height is 66 inches.

**5. GAS PIPING**

The gas line final connections are to be completed.

**D. FINAL INSPECTION**

**1. ENERGY REGULATIONS**

A weatherproof card that gives instruction for the energy efficient operation of the pool or spa and for the proper care of pool or spa, if heated, shall be on the site.

**2. POOL LIGHT**

The pool light shall be operable and protected by a ground fault circuit interrupter.

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